[0024] Archive storage **230** is provided for off-line storage of the DVDs. The archive storage **230** may be shelf-type storage remote from the rest of the system. The archive storage **230** may include either duplicate copies of DVDs mounted in the jukebox storage **220** so that the information appears in both near-line and off-line states or DVDs that are removed from the jukebox storage **220** and are present only in the archive storage **230**. The DVDs are physically placed in the archive storage from either the jukebox storage **220** or the media recorder **260** as represented by the dashed lines. Alternatively, some form of robotic manipulator may be employed to exchange archival storage media between "near-line" and "off-line" status. When the information contained on an off-line DVD is attempted to be accessed by the UI **200**, a volume label of the DVD that was removed or copied from the jukebox storage **220** will result, indicating its "off-line" status.

[0025] The present archive system allows for a virtual archive **100** to be provided as illustrated in **FIG. 1**(*c*). The virtual archive **100** may include a set **110** of information groups **110**A, **110**B, and **110**C that are in combinations of on-line, near-line, and off-line states. In one example, information group **110**A is stored on-line and information groups **110**B and **110**C are stored near-line. In this case, a primary database **120** is stored in a separate medium from the other information groups **110**A, **110**B, and **110**C of the virtual archive **100**. Within each of the information groups **110**A, **110**B, and **110**C, local databases **112**A, **112**B, and **112**C are respectively stored. The primary database **120** has a database file for the constituent information groups of the virtual archive **100** to all of the local databases **112**A, **112**B, and **112**C, the status of the storage media, the recorded time of the storage media, the type of data in the storage media, and other descriptive references relating to this virtual archive **100**. Thereby, all of the related information groups **110**A, **110**B, and **110**C can be readily accessed and retrieved despite being retained in different storage states.

[0026] The virtual archive **100** may be merged and modified as illustrated in **FIG. 1**(*d*). In this example, two information groups **110**A and **110**B may be retrieved from the virtual archive **100** to create another virtual archive **150**. A set **160** of information groups **160**A and **160**B is created as duplicates or subsets from the information groups **110**A and **110**B. As above, the virtual archive **150** includes a primary database **170** for relating local databases **162**A and **162**B contained within the information groups **160**A and **160**B and retained in different storage states. Accordingly, the virtual archive **150** includes the information groups **160**A and **160**B while the information groups **110**A, **110**B, and **110**C in the virtual archive **100** remain intact.

[0027] When the media recorder **260** records a DVD, a unique identifier is encoded thereon. This identifier uniquely identifies each DVD so that a DVD can be tracked, managed, and interchanged at different locations. Thereby, DVDs from one archive system can be transparently accessed and/or merged with DVDs from another archive system. In one embodiment, the unique identifier is a concatenation of a distinctly assigned volume label followed by values representing the recorded year, day within the year, hour, minute within the hour, seconds, and milliseconds. For example, a DVD assigned a volume label of 1.2.840.113815 on Sep. 22, 1999 at 9:12:46.157 AM would have the following identifier:

[0028] 1.2.840.113815.1999265091246157.

[0029] In this example, no two primary DVD copies will have the same identifier. The identifier is machine-readable and conforms to the universal disk format (UDF) standard volume label format for removable media.

[0030] Each DVD also includes a self-contained database file for holding all of the meta-data required to completely describe a procedure or study stored on that DVD. For instance, in the medical environment, the self-contained database may include all of the demographics for a patient required to adequately review the clinical procedures, stored on that medium. Digital Image Communications for Medicine (DICOM-3) is preferably used to implement this database file. DICOM-3 is a known standard for enhancing the ability of medical imaging devices and equipment to transfer medical images and information between systems, such as between a computer tomography (CT) scanner, a workstation, and a printer.

[0031] By requiring each information group or the information for each patient to be entirely contained on one storage medium or DVD, it is possible to utilize the self-contained database file for independently accessing, viewing, and processing each DVD. This addresses a deficiency associated with conventional HSM based systems using DICOM-3, with which patient data often spans two media, such as two magnetic tape units. Each DVD may be exchanged between archive systems without secondary database transactions to fully describe a procedure or study. Also, standard clinical imaging stations may directly read the DVDs, allowing review of archived images outside of the archive system in which it was originally created. This is in contrast to prior art systems in which the contents of one storage mechanism such as a magnetic tape are meaningless outside the context of the archive in which it was created. In the event of failure of the primary archive system according to the present invention, information from the DVD may be retrieved on a different archive system, computer, or imaging station.

[0032] System auditor data is also recorded on the DVDs for allowing information to be mounted in or removed from an archive system. Information from the DVD's comprising the archive is automatically synchronized to the primary information database whenever information is added to or read from a DVD. The system auditor allows DVDs from different archives to be combined to create a new archive with a single coherent primary database. When a DVD is removed from the system, the system auditor changes the location and status information for that DVD in the primary database to the off-line.

[0033] The archive system may also include software for automated network-based media duplication. This duplication software allows for the creation of exact duplicates of the DVDs stored in the archive system on a network attached thereto. Thereby, exact copies of primary archival storage media may be created and stored at different physical locations so that a complete restoration of the archived information may be performed in the event of a disaster. When using the duplication software in combination with the system auditor, an empty primary database may be completely rebuilt from information stored on archived storage media. If an archive system is completely destroyed,